AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A method for ~~the~~ demodulation of radio navigation signals ~~(s(t))~~ that are transmitted in spread spectrum and ~~comprising~~ that comprise (i) a data channel ~~which~~ that is modulated by a navigation message and (ii) a pilot channel ~~which~~ that is not modulated by ~~a~~ the navigation message, the data channel and the pilot channel being combined into one multiplexing scheme in order to modulate a carrier, ~~this~~ the method comprising:

determining Doppler velocity aid using a discrete navigation system that does not rely only on the radio navigation signals, wherein the discrete navigation system combines information from the radio navigation signals with other information that is independent of the radio navigation signals;

generating a despread data signal by subjecting the signals of the pilot and data channels to despreading processing; and ~~in~~

demodulating the ~~despreaded~~ despread data signal ~~(r_d)~~ in order to obtain the navigation message ~~$\langle d(t) \rangle$~~,

wherein the demodulation of the despread data signal ~~(r_d)~~ used to obtain the navigation message ~~$\langle d(t) \rangle$~~ is performed with the aid of the carrier ~~(r_p)~~ obtained from the despreading processing of the pilot channel, ~~and~~

wherein the despreading processing is performed by code tracking ~~processing,~~ processing combined with at least one of carrier phase tracking processing or carrier frequency tracking processing~~,~~ ~~in which~~

wherein the code tracking processing is performed using a ~~with the aid of a delay-lock-loop~~ delay-lock loop (DLL)~~,~~ and

wherein the carrier tracking ~~processing,~~ processing is performed ~~with the aid of~~ using a frequency-lock loop (FLL) based on the Doppler velocity aid.

2. (Currently Amended) The method as claimed in claim 1, wherein the pilot channel and the data channel ~~of the signal to be demodulated~~ are time-multiplexed.

3. (Currently Amended) The method as claimed in claim 1, wherein the pilot channel and the data channel ~~of the signal to be demodulated~~ are phase-multiplexed.

4. (Cancelled)

5. (Currently Amended) The method as claimed in claim 1, wherein the pilot channel and the data channel ~~of the signal to be demodulated~~ are multiplexed in accordance with a scheme in which the carrier ~~contains~~ includes at least the data channel and the pilot channel ~~of the signal to be demodulated~~.

6-7. (Cancelled)

8. (Currently Amended) The method as claimed in claim 1, wherein ~~it~~ the method is applied to ~~the~~ at least one of (i) demodulation of satellite navigation signals of ~~the~~ GPS-IIF L5, L2C type, or ~~to the~~ (ii) demodulation of satellite navigation signals transmitted by one of a ~~the~~ GALILEO system, ~~or transmitted by~~ ground stations, ~~by~~ modernized GLONASS satellites, ~~or by~~ COMPASS satellites, or QZS satellites.

9. (Currently Amended) A receiver for radio navigation signals that are transmitted in spread spectrum and ~~comprising~~ that comprise (i) a data channel ~~which~~ that is modulated by a navigation message and (ii) a pilot channel ~~which~~ that is not modulated by ~~a~~ the navigation message, the receiver comprising:

a despreading and tracking device comprising (i) a spreading code generator ~~which~~ that supplies spreading codes ~~(E_P, L_P, P_P, E_D, L_D, P_D, NH_data, NH_pilot)~~ and (ii) first means for applying the spreading codes to ~~the signals of~~ the pilot channel and the data channel in order to obtain despread pilot and data signals;~~,~~ ~~wherein the receiver comprises~~

a demodulator ~~which~~ that uses the despread pilot signal to demodulate the despread data signal in order to obtain the navigation message; and ~~(d), said receiver comprises~~

second means for estimating or tracking ~~the~~ frequency or phase of the despread pilot ~~channel~~ signal ~~and wherein it~~, wherein the second means comprises a frequency-lock loop (FLL) ~~for tracking~~ that tracks the pilot signal and a delay-lock loop (DLL) ~~which~~ that drives the spreading code generator, wherein the FLL is designed to receive Doppler velocity aid from a navigation system that combines information from the radio navigation signals with other information that is independent of the radio navigation signals.

10-11. (Cancelled)

12. (Currently Amended) The receiver as claimed in claim 9, wherein the ~~frequency-lock loop (FLL)~~ FLL comprises a discriminator of extended arctangent form.

13. (Currently Amended) The receiver as claimed in claim 9, wherein the ~~frequency-lock loop (FLL)~~ FLL comprises one of a first-order filter and a ~~or~~ second-order loop filter, wherein the filter ~~which~~ is adapted to ~~the~~ dynamics of the ~~received~~ radio navigation signals.

14. (Currently Amended) The receiver as claimed in ~~claim 9~~ claim 13, wherein ~~the~~ an output of the filter ~~of the frequency-lock loop (FLL)~~ is coupled to the ~~delay-lock loop (DLL)~~ DLL, the ~~delay-lock loop~~ DLL comprising a zero-order loop filter.

15. (Currently Amended) The receiver as claimed in claim 9, wherein the ~~delay-lock loop (DLL)~~ DLL comprises a discriminator ~~which~~ that is applied to the despread pilot ~~signals~~ and ~~to the~~ data signals, the despread data ~~signals~~ signal being weighted by a coefficient ~~which~~ that depends on ~~the~~ a signal-to-noise spectral density ratio (C/N_0) of the ~~received~~ radio navigation signals.

16. (Cancelled)